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DIOPHANTINE ANALYSIS.

93. Proposed by the late SYLVESTER ROBBINS.

Solve and set forth twenty terms in some infinite series of rational parallelopipeds following the solid whose edges are 2, 3, 6, and diagonal 7.

94. Proposed by L. C. WALKER, A. M., Petaluma High School, Petaluma, Cal.

Show that the area of a rational triangle cannot be a square number.

AVERAGE AND PROBABILITY.

117. Proposed by G. B. M. ZERR, A. M., Ph. D., Professor of Chemistry and Physics, The Temple College, Philadelphia, Pa.

A straight line is drawn at random parallel to the base of a given triangle. Three random points are then taken, one on each side of the random line and one anywhere in the triangle. Find the average area of the triangle formed by the three random points.

118. Proposed by F. P. MATZ, Sc. D., Ph. D., Professor of Mathematics and Astronomy in Defiance College, Defiance, Ohio.

Find the mean distance between two points taken at random in an equilateral triangle.

MISCELLANEOUS.

118. Proposed by L. C. WALKER, A. M., Petaluma High School, Petaluma, Cal.

Show how to determine the illumination at any point of the surface of the water at the bottom of a deep well, due to the light from the sky.

119. Proposed by W. J. GREENSTREET, A. M., Editor of The Mathematical Gazette, Stroud, Gloucestershire, England.

Prove $\Sigma\cos^4 x - 2\Pi\cos^2 x + 2\Pi\sin^2 x = 1 - \sin(\Sigma)\sin\Pi(y+z-x)$.

NOTES.

Through the kindness of Dr. D. E. Smith, we are enabled to furnish a picture of M. Hermite.

Professor W. H. Metzler, of Syracuse University, has been elected Corresponding Member of the Royal Society of Canada.

During the recent Summer Quarter of the University of Chicago there were offered fourteen mathematical courses with a total registration of three hundred seventeen.

Professor E. Woelffing, of Stuttgart, Germany, is preparing a catalogue of non-periodical literature in mathematics and mechanics, soon to be ready for publication. It will contain about sixteen thousand titles arranged under four hundred headings.